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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
CHANG, AUDREY Y	

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/055,890	HONG, HYUNG KI	
	Examiner	Art Unit	
	Audrey Y. Chang	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **May 10, 2004** has been entered.

2. This Office Action is also in response to applicant's amendment filed on **April 8, 2004**, which has been entered into the file.

3. By this amendment, the applicant has amended claims 1, 2 and 7.

4. Claims 1-9 remain pending in this application.

5. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Korean on January 28, 2002. It is noted, **however**, that applicant **has not filed a certified copy** of the foreign application as required by 35 U.S.C. 119(b). The applicant is respectfully noted that ONLY the cover page but not the certified **copy** of the APPLICATION is filed.

6. The set of drawing filed on January 28, 2002 is acceptable for examination purpose. If there is any informality in the drawings the draftsman will notify the applicant at the time of issue.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claim 1 is rejected under 35 U.S.C. 112, first paragraph**, as based on a disclosure which is not **enabling**. A *means* such as ***parallax barrier*** that is *switched* by the application of the voltages to provide

different image transmitting functions are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). **Claim 1 has been amended** to add the feature of "*selectively transmitting* a left-eye picture and a right-eye picture of a picture displayed on the display unit by *an application of first and second voltage having a different voltage level* ... transmitting the picture displayed on the display unit ... by *application* of a *third voltage* other than the first and second voltages in the plane mode". The specification and the claims however **fail** to teach how could the image be *selectively transmitted* by *simply applying voltages*, whether they are of same or different voltage levels. An image simply cannot be transmitted by applying voltage, since transmission of image is an optical function not an electrical function. The voltage is applied on certain ***optical element*** to control the optical element to have different optical functions with respect to the level of voltage being applied wherein the different optical functions are responsible to transmit the image. However the claim **FAILS** to disclose such optical element, which is **essential** to enable the display of a multi-mode stereoscopic image. Furthermore, the specification and the claim **fail** to teach what are the **essential criterions** for the image displayed on the display unit, which is the same for either of the stereoscopic mode and the plane mode, to be directed to the observer in different manner (i.e. right eye picture to right eye and left eye picture to left eye respectively in stereoscopic mode and left eye and right eye image to both eyes in the plane mode). Some sort of *coding scheme* such as *color coding* or *polarization coding* for the right eye and left eye picture, and the corresponding color selection or polarization selection provided by the optical element are essential in order for the optical element to provide different optical functions described in the claim. Claim 1 completely **fails** to describe such selective functions corresponding to the left eye and right eye picture, the claim therefore is not enabling.

9. **Claims 2-9 are rejected under 35 U.S.C. 112, first paragraph,** as based on a disclosure which is **not enabling,** the *corresponding complementary color coding of the left eye and right eye perspective image* with respect to the *color arrangement* of the *variable color barrier* are **critical** or **essential** to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. The claims **must show** the **correspondence** between the *color coding* of the images and the *color coding of the color barrier* in order for the right eye image to go to right eye only and the left eye image to go to left eye only, as in the stereoscopic mode and **the correspondence** between the *complementary color filters* and the *left eye picture and right eye picture* in the plane mode. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The specification and claims **fail** to teach how could the stereoscopic image be observed by *simply* having a variable color barrier. Claims 3-6 and 8-9 inherit the rejections from their respective based claims. The specification and the claims also **fail** to teach how could the color barrier with the alternative color filters is capable of providing plane view.

Claim 2 only gives the description for the variable color barrier for *selectively transmitting* the picture on the display device response to first and second voltage for stereoscopic mode and response to third voltage for plane mode, **yet the claim fails to make a distinguish** between the "*selectively transmitting*" of the picture when the color barrier is response to the *first*, *second* or *third* voltage to enable the *stereoscopic* or *plane* view. At this juncture, there is **no difference** in the ***function*** of the color barrier when in response to the different voltage, which therefore **fails** to establish the **enablement** of the stereoscopic view and plane view. The applicant is respectfully noted by having a color barrier with alternatively arranged first color filters and second color filters **would not be able to achieve** either the stereoscopic view or the plane view. The video signals that displayed on the display device **must** have a combined video signal at **each pixel** of the display device so that each pixel has **both** the *right* eye image and *left* eye image signal, yet with **different color-coding**. When stereoscopic mode is selected the color barrier is switched in such a way that **only** the right eye image will go to right eye and the left eye image

will go to left eye, (the applicant still **fails to** explain how the color barrier is arranged to achieve such), when in the plane mode is selected the color barrier is switched in such way that **both** right eye image and left eye image will go to **both** eyes, (the applicant also still **fails to** explain how the color barrier is arranged to achieve such). It is necessary for the color barrier to have different arrangement or function when in stereoscopic mode or in plane mode **yet** the applicant still fails to state such difference, which therefore fails to make the enablement requirement for the claims.

10. **Claims 7-9 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the **enablement** requirement. The claim(s) contains subject matter which was **not** described in the specification in such a way as to **enable** one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification and the claims fail to teach how could the stereoscopic image be observed by having color barrier and a *light scattering device*. Claim 7 fails to disclose an operable device since the image displaying apparatus as described therein is *not capable* of providing stereoscopic image display, or fails to provide the essential criterion for achieving such. The applicant is once again respectfully noted by having a color barrier with alternatively arranged first color filters and second color filters **will not be able to achieve** either the stereoscopic view or the plane view. **Claim 7 has been amended** to include the feature such that the color barrier having first color filters and second color filters for selectively transmitting a left eye picture and right eye picture to the left eye and right eye of the observer yet the specification and claims **fail** to teach how does this arrangement be operable with the light scattering device for either scattering the image light or pass the image light as it is to achieve the different mode.

Claims 8-9 inherit the rejections from their based claims.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Isono et al (PN. 5,315,377).

Isono et al teaches a three-dimensional image display that is comprised of a *liquid crystal display panel* (46) serves as the display device to display a picture according to image signals and *electrically generates parallax barrier strips* on a *parallax barrier panel* (28) such that the size and the number of the barrier strips may be adjusted so that they interfere with the image light transmitted from the display panel (46) to display the image either in a *two dimensional mode* (2D) or in a *three-dimensional mode* (3D), (please see Figures 1-2 and columns 1-5). Isono et al teaches in the 3D mode the barrier strips direct the right eye perspective image to the right eye of an observer and the left eye perspective image to the left eye, to create stereoscopic illusion to the observer, (please see Figure 2).

This reference does not teach explicitly that the image signals are obtained by photographing an object at a different angle on a display unit. However it is an essential **criterion** for the image signal to include right eye perspective view and left eye perspective view of the object (i.e. at different angle) in order to achieve stereoscopic viewing, such feature is *inherently* included in the apparatus of the Isono et al since it does teach to use video signal lines (64-1, 64-2) to input right eye image signal (R) and left eye image signal (L) to the display device, (please see Figure 2). To photograph the object at different angle in order to provide the right eye perspective view and left eye perspective view is the most common practice in the art to obtain parallax images of an object. It would then have been obvious to one skilled

in the art to modify the method accordingly to obtain the parallax images of the object photographically for the displaying of stereoscopic image.

Claim 1 has been amended to include the feature such that the selective transmission of the left eye and right eye image in the stereoscopic mode is achieved by applying a first and second voltage that are different from each other and the transmission in the plane mode is achieved by a third voltage differs from the first and second voltages. Isono et al teaches that the parallax barriers on the parallax barrier panel (28) are ***electrically*** *switched*, which implicitly requires certain **voltages applications**. Isono et al teaches that the panel has **different** barrier configurations for the stereoscopic mode and for the two dimensional mode, this means **different voltage** must be applied to achieve such. However this reference does not teach explicitly about the claimed voltage levels. But such modification is considered to be obvious matters of design choice to one skilled in the art since the parallax barrier panel of Isono et al does achieve the **same function**, which transmits left eye and right eye pictures to left eye and right respectively in the stereoscopic mode and transmits both pictures to both eyes in the plane mode. To use same or different voltages to achieve the switching is rather a matter of choice to one skilled in the art.

13. Claims 2-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Hematite et al (PN. 5,751,479).

The claims as indicated in the paragraphs fail to provide adequate writings for describing a workable apparatus or for providing the enablement of the apparatus; they can only be examined in the broadest interpretation.

Hamagishi et al teaches a *three dimensional display* that is capable of being switched between stereoscopic mode and 2D display mode, wherein the apparatus is comprised of *a liquid crystal display device* (1, Figure 7) serves as the image display device, a *light source* (2) and *a color filter* (3), comprises different filtering regions *alternatively* arranged that each filters light in a different color that includes

complementary color filter regions such as red and green, and a *polymer dispersed liquid crystal panel* (17), wherein the color filter and the polymer dispersed liquid crystal panel serve together as the *variable color barrier*. Hamagishi et al teaches when the polymer dispersed liquid crystal panel is switch *on* the color filter with the panel is switched to stereoscopic mode for directing and separating the image displayed on the liquid crystal display in such a way that left eye image reaches left eye of an observer and the right eye image reaches the right eye of the observer to create stereoscopic image display. When the LCD panel (17) is switched *off* the light from the color filter is combined to white light such that a 2D image display mode is presented, (please see Figures 7-8 and columns 7-8). Hamagishi et al teaches that the color filter can either be placed in front of the backlight or in front of the display device. This reference does not teach explicitly that the image signals are obtained by photographing an object at a different angle on a display unit. However such method is the most common practice in the art to obtain parallax images of an object. It would then have been obvious to one skilled in the art to modify the method accordingly to obtain the parallax images of the object photographically for the displaying of stereoscopic image. With regard to claim 7, the polymer dispersed liquid crystal panel serves as the light scattering device that is switched between a translucent state (ON state) and a scattering state (OFF state) to enable either the stereoscopic view or plane view, (please see column 7, lines 54-67).

With regard to claim 7, the ***amended feature*** concerning the color barrier selectively transmits the left eye picture and right eye picture to the left eye and right eye. This is explicitly taught by the combination between the color filter (3) and the color-coded image elements on the display (1) as shown in Figure 7. It is known in the art that without the color coding of left eye and right eye picture the color filters WILL NOT be able to selectively transmit the left eye and right eye picture.

Response to Arguments

14. Applicant's arguments filed on April 8, 2004 have been fully considered but they are not persuasive. The newly amended claims have been fully considered and they are rejected for the reasons stated above.

15. In response to applicant's arguments concerning the rejections under 35 USC 112, first paragraph, it is noted that the **features** upon which applicant relies (i.e., applicant's arguments reference to specification concerning the rejections of the claims under 35 USC 112, first paragraph) are **not recited** in the rejected claim(s). Although the claims are interpreted in light of the specification, **limitations from the specification are not read into the claims**. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant is respectfully reminded that claims must **positively** claim all of the critical elements to make the claims operable.

16. Applicant's arguments concerning the newly added features in the claims have been fully considered and addressed in the paragraphs above.

17. In response to applicant's arguments, which state that the cited Hamagishi et al reference fails to teach the arrangement of color filters and transmission of the left eye picture to left eye and right eye picture to right eye for stereoscopic mode as stated in claim 7, the examiner respectfully disagrees for the reasons stated below. The applicant is respectfully advised to study the Hamagishi et al reference more closely. Hamagishi et al specifically teaches to have alternatively arranged color filters and light scattering device to achieve stereoscopic mode in Figure 7, with left eye picture transmitted to left eye and right eye picture transmitted to the right eye. A plane mode is disclosed in Figure 8.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Audrey Y. Chang
Primary Examiner
Art Unit 2872

A. Chang, Ph.D.